

WHAT IS CLAIMED IS:

1. A method of reducing the toxicity of an adjuvant to an animal comprising the steps of:
- 5 i) providing an adjuvant preparation comprising a CD40 ligand and at least one antigen wherein said CD40 ligand is crosslinked to said antigen;
- ii) administering an effective amount of the crosslinked adjuvant to said animal sufficient to provoke an immune response to said antigen by activation of a CD40 presenting cell.
- 10 2. A method according to Claim 1, wherein said CD40 ligand is an antibody, or binding part thereof, which binds CD40.
3. A method according to Claim 2, wherein said antibody is a monoclonal
- 15 antibody.
4. A method according to Claim 3, wherein said monoclonal antibody is humanised.
- 20 5. A method according to Claim 1, wherein said CD40 ligand is CD40L.
6. A method according to Claim 1, wherein said adjuvant activates a CD40 presenting B – lymphocyte to promote immunoglobulin secretion.
- 25 7. A method according to Claim 1, wherein said adjuvant activates a CD40 presenting B-lymphocyte to promote immunoglobulin isotype switching.
8. A method according to Claim 1, wherein said antigen is a T-cell dependent antigen.

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9. A method according to Claim 8, wherein said T-cell dependent antigen is a viral antigen.

10. A method according to Claim 9, wherein said viral antigen is an HIV
5 antigen.

11. A method according to Claim 10, wherein said HIV antigen is a polypeptide comprising the amino acid sequence CTRPNNNTRKSIRIQRGPG (SEQ ID NO:1).

10 12. A method according to Claim 8, wherein said viral antigen is a herpes simplex virus antigen.

13. A method according to Claim 12, wherein said herpes simplex virus antigen is a glycoprotein.

15 14. A method according to Claim 13, wherein said glycoprotein is glycoprotein D.

15. A method according to Claim 13, wherein said glycoprotein is glycoprotein B.

20 16. A method according to Claim 15, wherein said glycoprotein comprises the amino acid sequence SSIEFARL (SEQ ID NO:2).

17. A method according to Claim 9, wherein said antigen is an influenza antigen.

25 18. A method according to Claim 17, wherein said antigen is derived from influenza isolate A/Bangkok/10/83.

19. A method according to Claim 18, wherein said antigen consists of influenza isolate A/Bangkok/10/83.

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20. A method according to Claim 1, wherein said antigen is a T cell independent antigen.

5 21. A method according to Claim 20, wherein said T-cell independent antigen is a polysaccharide.

10 22. A method according to Claim 21, wherein said polysaccharide are capsular polysaccharides of bacterial species selected from the group consisting of: *Streptococcus pneumoniae*, *Haemophilus influenzae* and *Neisseria meningitidis*.

23. A method according to Claim 22, wherein said capsular polysaccharides are derived from *Streptococcus pneumoniae* and selected from the group consisting of: type 1, 3, 4, 8, 12, 13, 19 or 23.

15 24. An adjuvant comprising a CD40 ligand crosslinked to at least one viral antigen.

20 25. An adjuvant according to Claim 24 wherein said viral antigen is an HIV antigen.

26. An adjuvant according to Claim 25 wherein said viral antigen is a polypeptide comprising the amino acid sequence CTRPNNNTRKSIRIQRGPG (SEQ ID NO:1).

25 27. An adjuvant according to Claim 24 wherein said viral antigen is a herpes simplex virus antigen.

28. An adjuvant according to Claim 27 wherein said herpes simplex virus antigen is glycoprotein D, accession number NP044668.

30 29. An adjuvant according to Claim 27 wherein said herpes simplex virus antigen is glycoprotein B.

30. An adjuvant according to Claim 29 wherein said glycoprotein B comprises the amino acid sequence SSIEFARL (SEQ ID NO: 2).

5 31. A vaccine composition comprising an adjuvant according to Claim 24.

32. A vaccine composition comprising an adjuvant according to Claim 25.

10 33. A vaccine composition comprising an adjuvant according to Claim 26.

34. A vaccine composition comprising an adjuvant according to Claim 27.

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